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Society for Historians of the Early American Republic

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Source: *Journal of the Early Republic*, Fall 2018, Vol. 38, No. 3 (Fall 2018), pp. 501-529

Published by: University of Pennsylvania Press on behalf of the Society for Historians of the Early American Republic

Stable URL: https://www.jstor.org/stable/10.2307/90024946

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Hoaxes, Humbugs, and Frauds

Distinguishing Truth from Untruth in Early America

LUKAS RIEPPEL

I am far from the first to be captivated and charmed by the huckster, the trickster, and confidence man. Inhabitants of nineteenth-century North America were too, and they took considerable delight in stories regarding the difficulty of distinguishing truth from untruth. Judging from Johnson Jones Hooper's *Adventures of Captain Simon Suggs* and Hermann Melville's *The Confidence-Man*, not to mention the autobiographical *Life of P.T. Barnum*, the United States seemed to be overrun by imposters of various kinds. These have begat a large scholarly literature about the machinations of such shifty and sometimes unsavory characters. Still, it is my hope that something new may be said by approaching the subject from a somewhat different perspective. Rather than chronicle the history of humbug per se, I want to ask what deception and fraud reveal about the way knowledge was socially constituted in the first half of the nineteenth century. My claim is that to accuse someone of fraud was to seek their expulsion from the community of knowing subjects, whereas to defend someone against such an accusation was to vouchsafe and uphold the value of their contributions to that community. Both dynamics reveal that one of the uses to which knowledge was put was to serve as a powerful sorting mechanism for delimiting membership in what might best be described as a knowledge community.[1]

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1. This means that debates about hoaxes, humbugs, and frauds in nineteenth-century North America are an example of what the sociologist Thomas Gieryn calls "boundary work." See Thomas F. Gieryn, "Boundary-Work and the Demar-

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In advancing the claim that accusations of fraud may be understood as a technique to police membership in a knowledge community, this essay departs from more normative accounts that characterize deception as the spreading of falsehood and misinformation. Insofar as they muddy the waters of truth, the trickster, liar, and confidence man are often seen to pose a grave danger indeed. To cite a single but important example from recent history, a small group of professional skeptics (funded by the petroleum industry) have successfully undermined what we know about anthropogenic climate change, with disastrous consequences. Perhaps even worse is that deception and fraud effectively undermine the foundations that make reliable knowledge possible in the first place. Because knowledge constitutes a social good—the intersubjective achievement of an entire community—members of that community must be able to trust one other. Not only must they rely on past findings as accurate and reliable, but accessing recondite parts of the world also requires collaboration among a remarkably far-flung network of observers. Thus, deception and fraud not only threaten to undermine particular truths such as the reality of anthropogenic climate change. They strike at the very foundations of social epistemology.[2]

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cation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists," *American Sociological Review* 48, no. 6 (1983), 781–95; Gieryn, *Cultural Boundaries of Science: Credibility on the Line* (Chicago, 1999). For more on the history of deception during this period, see, for example, James W. Cook, *The Arts of Deception: Playing with Fraud in the Age of Barnum* (Cambridge, MA, 2001); Kathleen De Grave, *Swindler, Spy, Rebel: The Confidence Woman in Nineteenth-Century America* (Columbia, MO, 1995); Ann Fabian, *Card Sharps and Bucket Shops: Gambling in Nineteenth-Century America* (New York, 1999); Karen Halttunen, *Confidence Men and Painted Women: A Study of Middle-Class Culture in America, 1830–1870* (New Haven, CT, 1982); Jane Kamensky, *The Exchange Artist: A Tale of High-Flying Speculation and America's First Banking Collapse* (New York, 2008); Michael Pettit, *The Science of Deception: Psychology and Commerce in America* (Chicago, 2013); Stephen Mihm, *A Nation of Counterfeiters: Capitalists, Con Men, and the Making of the United States* (Cambridge, MA, 2007).

2. On climate-change skepticism, see Naomi Oreskes and Erik M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming* (New York, 2010). On "agnatology," or the social construction of ignorance, more broadly, see Robert Proctor and Londa L. Schiebinger, eds., *Agnotology: The Making and Unmaking of Ignorance* (Stanford, CA, 2008); Robert N. Proctor, *Golden Holocaust: Origins of the Cigarette*

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For related reasons, deception and fraud are also widely regarded to threaten the possibility of economic exchange. Parties who cannot trust one another to make good on their promises find it difficult to engage in fruitful transactions, just as money that is not trusted to hold its value fails to function as a reliable medium of exchange. As a result, many historians emphasize the "coordinating mechanisms" that both scientific and economic communities have developed to promote the free flow of factual statements and commercial goods. In addition to such social and cultural instruments as shared codes of civility and normative expectations of moral conduct, these mechanisms include formal regimes of oversight and control. For example, the dense and complex managerial structure adopted by many large corporate firms in the late nineteenth century is often explained as a means to reduce transaction costs by dampening the risks of doing business under conditions of asymmetrically distributed information. Similarly, the growth of an ambitious regulatory state in the early twentieth century is usually described as an attempt to address the problem of commercial deceit. In a striking convergence, the end of the nineteenth century also saw scientists develop new methods to guard against bias and outright misconduct by imposing a range of formal procedures ranging from standardized peer review to statistical tests of significance and other "objective" methods of rigorous hypothesis-testing. What united these disparate efforts was not just that they were all aimed at overcoming the problem of deception and fraud, but that they reveal two different and distinct general strategies for doing so, consisting either of a reliance on social networks mediated by personal bonds of trust or on more formal governance structures and techniques of control.[3]

Catastrophe and the Case for Abolition (Berkeley, CA, 2011); Londa Schiebinger, *Plants and Empire: Colonial Bioprospecting in the Atlantic World* (Cambridge, MA, 2004). The classic account of trust in science remains Steven Shapin, *A Social History of Truth: Civility and Science in Seventeenth-Century England* (Chicago, 1994). For the importance of trust in natural history, see Harold J. Cook, *Matters of Exchange: Commerce, Medicine, and Science in the Dutch Golden Age* (New Haven, CT, 2007); Anne Secord, "Corresponding Interests: Artisans and Gentlemen in Nineteenth-Century Natural History," *British Journal for the History of Science* 27, no. 4 (1994), 383–408.

3. On vertical integration as a strategy for reducing transaction costs, see R. H. Coase, "The Nature of the Firm," *Economica* 16, no. 4 (1937), 386–405; Naomi R. Lamoreaux, Daniel M. G. Raff, and Peter Temin, "Beyond Markets and

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This essay follows a somewhat different trajectory: Instead of investigating various practices or procedures, formal as well as informal, used to dampen the threat of being deceived, my focus is ontological, asking what sorts of behaviors counted as fraudulent and what sorts of people were accused of being tricksters, hoaxers, and confidence men. In so doing, I want to treat normative questions about truth and untruth as an empirical matter. Rather than presupposing that fraudulent or deceptive claims were untrue, I want to examine the way knowledge communities made their own normative judgments in distinguishing truth from falsehood, and honesty from fraud, during the first half of the nineteenth century. Doing so reveals how the demarcation between truth and untruth was actively policed. Moreover, it shows that to affirm (or withhold) an accusation of fraud served as an effective means to exclude (or include) certain actors from the community of trustworthy knowing subjects.

Two parallel cases of deception and fraud illuminate how antebellum Americans with claims to scientific and medical expertise aimed to police the boundaries between truth and untruth. The first concerns a heated debate over the authenticity of a fossil sea serpent that was exhibited and then offered for sale by a specimen dealer and dime-museum operator from St. Louis named Albert Koch. The second revolves around Samuel Thomson, a better-known figure from the history of "quack" or "alternative" medicine. Taken together, these cases furnish an intriguing and symmetrically inverse relationship: In the case of Koch's fossil sea serpent, the community of learned naturalists deliberately and consistently desisted from making an accusation of fraud. But in the case of Thomsonian medicine, established and university-trained physicians made

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Hierarchies: Toward a New Synthesis of American Business History," *American Historical Review* 108 (Apr. 2003), 404–33; Oliver E. Williamson, "The Modern Corporation: Origins, Evolution, Attributes," *Journal of Economic Literature* 19 (Dec. 1, 1981), 1537–68. On the regulatory state, see Edward J. Balleisen, *Fraud: An American History from Barnum to Madoff* (Princeton, NJ, 2017). On formal procedures for policing misconduct in science, see Theodore M. Porter, *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life* (Princeton, NJ, 1995); Lorraine Daston and Peter Galison, *Objectivity* (Brooklyn, NY, 2007). On peer review, see Alex Csiszar, "Peer Review: Troubled from the Start," *Nature* 532, no. 7599 (2016), 306.

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every effort to characterize their rivals as dangerous charlatans who were more likely to injure a patient than cure their disease. Moreover, in both of these cases, the practical difficulty of distinguishing truth from untruth served as a strategic resource instead of a liability, as it is often supposed to be. While it may have been hard to determine the truth of any particular matter at hand, the difficulty of doing so made it possible for members of different knowledge communities to remain flexible and exercise judgment in policing the boundary of acceptable conduct and determine with whom they were willing to associate publicly.[4]

The existence of sea serpents had long been a matter of heated debate among naturalists, men of letters, and the broader public. In the United States, this controversy grew especially fierce after a series of mariners claimed to have sighted such a creature off the coast of Gloucester, Massachusetts, during the summer of 1817. The sailors reported seeing a huge snake in the waters near Cape Anne that twisted its body in vertical motions, giving rise to a series of regular humps extending above the water's surface. A thorough investigation by a local justice of the peace, who had been commissioned by a group of Boston naturalists calling themselves the Linnaean Society of New England, lent some credence to the sightings. Still, the story failed to win widespread acceptance, largely because no one succeeded in producing a physical specimen to back up their eye-witness account. Before long, the Gloucester sea serpent became an occasion for ridicule, even prompting a satirical play penned in 1819 by William Crafts that counseled audiences to "Deem nothing true that is not proved—nor then / Believe it all—but doubt and doubt

4. These are hardly the only knowledge communities that could have been chosen for examination. Journalism, the legal profession, and the mineral industry are three additional arenas in which contemporaries displayed their authority to distinguish between truth and untruth and in which accusations of fraud abounded. See, for example, Susanna Blumenthal, "Humbug: Toward a Legal History," *Buffalo Law Review* 64, no. 1 (2016), 161–92; Matthew Goodman, *The Sun and the Moon: The Remarkable True Account of Hoaxers, Showmen, Dueling Journalists, and Lunar Man-Bats in Nineteenth-Century New York* (New York, 2008); Paul Lucier, *Scientists & Swindlers: Consulting on Coal and Oil in America, 1820–1890* (Baltimore, 2008).

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again," for "Falsehood's a floating superficial thing, / But truth is deeper than the deepest spring."[5]

Despite all the ridicule that was directed toward both the mariners and the Boston naturalists, the sea serpent question was not definitively settled. Indeed, a great many nineteenth-century naturalists would continue to argue that, on balance, the body of available evidence pointed in these creatures' favor. In a public lecture delivered fully three decades later, for example, the well-known comparative anatomist Louis Agassiz asserted that since the sea serpent "has been seen by so many on whom we may rely," it would be "wrong to doubt any longer." Agassiz's remarks appeared in a lecture devoted to recent findings in geology and paleontology, fields that had taken up the question of sea serpents as part of a more general effort to reconstruct a lost world via careful and detailed examinations of the fossil record. Among the most spectacular discoveries were several fierce-looking marine reptiles initially disinterred along the southwestern coast of England, especially the Ichthyosaur and the Plesiosaur. While some of these fossils bore a superficial resemblance to crocodiles, most of their anatomy departed radically from that of any known living creature. With such alien creatures as these being described by Agassiz and his colleagues on the basis of the fossil record, the possibility that a large serpentine creature might still exist in the depths of the ocean did not appear so far-fetched. This was all the more so given that Plesiosaur fossils featured an extremely long, tapering neck and a sizable tail that gave them a distinctly serpentine shape. Such discoveries led Agassiz to remark in his lecture that "if a naturalist had to sketch the outlines of an *Ichthyosaurus* or a *Plesiosaurus* from the remains we have

5. William Crafts, *The Sea Serpent, or Gloucester Hoax: A Dramatic Jeu d'esprit, in Three Acts* (Charleston, SC, 1819), 34. For more on the history of sea serpents, see Chandos Michael Brown, "A Natural History of the Gloucester Sea Serpent: Knowledge, Power, and the Culture of Science in Antebellum America," *American Quarterly* 42, no. 3 (1990), 402–36; Sherrie Lynne Lyons, *Species, Serpents, Spirits, and Skulls: Science at the Margins of the Victorian Age* (Albany, NY, 2009); A. C. Oudemans, *The Great Sea-Serpent* (Leiden, 1892); Harriet Ritvo, *The Platypus and the Mermaid, and Other Figments of the Classifying Imagination* (Cambridge, MA, 1997); Ron Westrum, "Knowledge about Sea-serpents," in *On the Margins of Science: The Social Construction of Rejected Knowledge*, ed. Roy Wallis (Keele, UK, 1979), 293–314.

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of them, he would make a drawing very similar to the Sea-Serpent as it has been described."[6]

The ongoing debates about sea serpents point to a broader lesson about the practice of natural history in early nineteenth-century North America. Because large parts of the continent—to say nothing of the depths of the ocean—remained unexplored by European settlers and their descendants, it remained extremely difficult to prove the negative and conclude with certainty that a particular creature definitely did not exist. Moreover, members of the Linnaean Society of New England resembled early North American naturalists more broadly in that none of them would have accepted the label of a "professional scientist." Indeed, most would have turned up their noses at such a description because it implied being paid for one's work. Right up to the end of the nineteenth century, naturalists tended to celebrate and respect their amateur status as a mark of distinction, an indication that they were engaged in a disinterested study of nature for its own sake alone and not in pursuit of material gain. For that reason, instead of relying on the kinds of professional networks that emerged at the end of the century, antebellum naturalists relied on friendships and other personal relationships for access to information and material specimens. Participation in a shared culture of civility, as opposed to possession of an advanced degree, a series of publications in peer-reviewed journals, or a university appointment, served to delimit the boundaries of the natural history community.[7]

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6. Quoted in Eugene Batchelder, *A Romance of the Sea Serpent: Or, The Ichthyosaurus* (Cambridge, MA, 1849), 137. For a textbook example of similar sentiments, see Robert Bakewell, *An Introduction to Geology* (New Haven, CT, 1833).

7. On professionalization, see Paul Lucier, "The Professional and the Scientist in Nineteenth-Century America," *Isis* 100, no. 4 (2009), 699–732. On personal networks in antebellum knowledge production, see Ann Fabian, "The Long Life of William Blanding: Doctor, Apothecary, Naturalist," *Journal of the Early Republic* 36 (Spring 2016), 5–36. For more on the importance of masculine friendships in early nineteenth-century North American natural history in particular, see Konstantin Dierks, "Letter Writing, Masculinity, and American Men of Science, 1750–1800," *Pennsylvania History: A Journal of Mid-Atlantic Studies* 65 (1998), 167–98; Thomas Hallock, "Male Pleasure and the Genders of Eighteenth-Century Botanic Exchange: A Garden Tour," *William and Mary Quarterly* 62, no. 4

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The signal importance of personal "friendship" in constituting the nineteenth-century American natural history community ensured it would be fairly homogenous with respect to the race, gender, and class status of its participants. Naturalists were, by and large, gentlemen. But there was one major exception: commercial showmen and specimen dealers, who often hailed from a more humble background. Moreover, these dealers were not expected to hide the financial ambitions that informed their collecting practices. But whereas the profit motive modulated the kinds of contributions they could make to the community, it did not diminish the importance of personal relationships based upon individual bonds of trust. On the contrary, a commercial collector's good name and reputation were routinely used as a proxy to assess the quality of his wares. Questions about the authenticity of a particular specimen therefore depended heavily upon judgments about the personal character of its collector. A specimen dealer's position within the community's tight-knight social structure was absolutely essential to his continued business success.[8]

(2005), 697–718; Dana D. Nelson, "'No Cold or Empty Heart': Polygenesis, Scientific Professionalization, and the Unfinished Business of Male Sentimentalism," *Differences: A Journal of Feminist Cultural Studies* 11, no. 3 (1999), 29–56. For more on masculinity in the sciences, see Erika L. Milam and Robert A. Nye, eds., *Osiris: Scientific Masculinities* 30 (2015).

8. The homogeneity of the scientific community does not mean that *knowledge* about nature was not appropriated from native peoples, women, and enslaved Africans by learned naturalists. See, for example, Ann Fabian, *The Skull Collectors: Race, Science, and America's Unburied Dead* (Chicago, 2010); Andrew J. Lewis, *A Democracy of Facts: Natural History in the Early Republic* (Philadelphia, 2011); Adrienne Mayor, *Fossil Legends of the First Americans* (Princeton, NJ, 2005); Susan Scott Parrish, *American Curiosity: Cultures of Natural History in the Colonial British Atlantic World* (Chapel Hill, NC, 2006). For more on commercial specimen collectors in natural history, see Mark Barrow, "The Specimen Dealer: Entrepreneurial Natural History in America's Gilded Age," *Journal of the History of Biology* 33 (Winter 2000), 493–534; Lukas Rieppel, "Prospecting for Dinosaurs on the Mining Frontier: The Value of Information in America's Gilded Age," *Social Studies of Science* 45, no. 2 (2015), 161–86; Steve Ruskin, "The Business of Natural History: Charles Aiken, Colorado Ornithology, and the Role of the Professional Collector," *Historical Studies in the Natural Sciences* 45, no. 3 (2015), 357–96. For a fascinating example of upward social mobility in the practice of natural history, see Gregory Nobles, *John James Audubon: The Nature of the American Woodsman* (Philadelphia, 2017).

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This was the world Albert Koch was to join. Born on May 10, 1804, in Germany, Koch eimgrated to the United States in the late 1820s in search of a more secure livelihood. He initially made ends meet by selling zoological specimens he collected near the shores of Lake Erie, mostly to the *Museum für Naturkunde* in Berlin. By the mid 1830s he had settled in St. Louis, where he opened a dime museum that offered an eclectic assortment of popular amusements ranging from beautifully stuffed birds and cosmoramic views of faraway places to theatrical performances of various kinds. About a decade or so after founding the museum, Koch developed a strong interest in the large fossil Mastodon bones that could be found along the Osage River in southwestern Missouri. Before long, he had collected sufficient material to assemble a spectacular exhibit that he christened the *Missourium*, or "Missouri Leviathan." This caused enough of a local sensation to convince Koch to sell his museum and take his star specimen on tour, eventually exhibiting it at Bullock's Egyptian Hall in Piccadilly and lecturing on the subject before the London Geological Society. If the Missouri Leviathan attracted crowds and publicity, it also attracted intense criticism among geologists, who accused Koch of adding several extraneous vertebrae to the skeleton's backbone and artificially inflating its size. Still, the noted comparative anatomist Richard Owen felt that even if the fossil did contain "certain mistakes," it nonetheless "illustrates the osteology of the gigantic Mastodon far more completely than . . . any other collection of North American fossils brought to Europe." Indeed, the specimen was deemed so significant the British Museum bought it for thirteen hundred pounds sterling, a remarkable sum at the time.[9]

With his confidence buoyed by the lucrative sale of the Missouri Leviathan, Koch returned to the United States in search of an even more

9. Richard Owen, "Report on the Missourium Now Exhibiting at the Egyptian Hall," *Proceedings of the Geological Society of London 3* (1842), 689. For Koch's speech to the Geological Society, see Albert C. Koch, "On the Genus Tetracaulodon," *Proceedings of the Geological Society of London* 3, part 2, no. 88 (1842), 714–16. See also Koch, *Description of the Missourium; or Missouri Leviathan, Together with Its Supposed Habits* (Louisville, KY, 1841); Koch, *Journey Through a Part of the United States of North America in the Years 1844 to 1846*, trans. Ernst Stadler (Carbondale, IL, 1972); Joachim Nuemann and Goffried Mauersberger, "Albert Und Louis Koch Und Ihre Nordamerikanische Sammlungen," *Mitt. Zool. Mus. Supp. Berlin* 66, no. Suppl. Ann. Orn. 14 (1990), 95–111.

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noteworthy specimen. Having heard of especially abundant reptilian fossils from the Lower Cretaceous in Alabama, he took a steamer from New York City to New Orleans and then over to Mobile. From there, Koch traveled north to Washington County, Alabama, where he would later claim to have found a complete, beautifully articulated vertebral column and skull of an enormously long serpent buried not far from the shores of the Sintabogue River. In a sensational pamphlet published later that year, Koch described the creature as measuring a hundred and fourteen feet in length, making it "without exception the largest of all fossil skeletons, found in either the old or new world." Christening it *Hydrarchos*, or king of the waters, he went on to speculate that the creature must have "reigned as a most tyrannical, cruel, and unconquerable monarch" whose enormously long and slender shape was suggestive "of the various statements made by persons in regard to having seen serpents in different parts of the ocean." Although Koch freely admitted previous eye-witness accounts of sea serpents "have in general gained but little credence," he was nonetheless confident he had found the "almost perfect remains of a huge Sea Serpent, or reptile, answering not only in its colossal size, but also in other respects remarkably the description given of a monster, which many respectable citizens have stated under oath that they have seen swimming alive on the ocean." In comparing his fossil to a modern sea serpent, Koch thus advanced two controversial claims about his discovery. Not only did he identify it as a reptile, but he also suggested that it had the power to settle once and for all the contentious and ongoing debate about whether sea serpents truly existed.[10]

For Koch's claims to seem credible to antebellum audiences, he had to overcome more than just public debate about the existence of sea serpents. He also had to overcome the conventional division of labor that characterized the antebellum natural history community. Commercial collectors and showmen like Koch were valued for bringing interesting and potentially important new objects to light, as well as for communicating the latest scientific discoveries to a larger and more socially diverse audience. But they were not usually trusted to author their own theoretical contributions to the discipline or to place their empirical findings within a broader, philosophical framework. In other words, they were

10. Albert C. Koch, *Description of the Hydrarchos Harlani: A Gigantic Fossil Reptile Lately Discovered by the Author* (New York, 1845), 9–11.

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trusted to present data, but not to extrapolate its broader meanings. Only those with extensive training in natural history were usually trusted to do that. Koch understood this division of labor well and knew that he could not promote a controversial taxonomic interpretation of his fossil discovery on his own. For that reason, Koch enlisted the Yale University geologist Benjamin Silliman to support his conclusions. Silliman confirmed the German collector's claims and issued an open letter attesting to the similarity between Koch's *Hydrarchos* and plesiosaurs, which he felt served to "countenance the popular (and I believe well founded) impression of the existence in our modern seas, of huge animals to which the name of sea-serpent has been attached." To make the most of Silliman's support, Koch reprinted his letter in several of his self-published pamphlets. For good measure, he submitted it to a number of newspapers as well.[11]

As with the *Missourium*, Koch was not content to publicize his latest discovery in print. In addition to a series of pamphlets and several well-placed newspaper accounts, he also took the *Hydrarchos* on tour, exhibiting its remains before eager audiences in a number of commercial exhibition spaces and amusement venues. During the summer of 1845 he sailed from New Orleans to New York and assembled his fossil in the Apollo Room on Broadway. According to journalists, the specimen was a spectacular success with the public. One contended that it had "proven" the existence of sea serpents "beyond doubt," while another described *Hydrarchos* as "well calculated to awe and astonish the spectator." Not everyone who saw the colossal skeleton was quite so impressed, however, particularly within the community of learned naturalists. Only a few weeks after Koch's exhibition opened on Broadway, the comparative anatomist and Harvard professor Jeffries Wyman made a careful examination of the specimen and concluded that, much like the *Missourium*,

11. Silliman's letter, portions of which Koch reproduced in his own publications, circulated widely in print. See, for example, O. S. Fowler, ed., "The Hydrarchos, or Great Sea Serpent," *American Phrenological Journal* 8 (Mar. 1846), 86; Henry Hall Scherwood, ed., "The Hydrarchos, or Great Fossil Sea Serpent," *The New-York Dissector* 1–4 (1848), 218. For more on the division of labor in natural history, see Martin J. S. Rudwick, "Charles Darwin in London: The Integration of Public and Private Science," *Isis* 73, no. 2 (1982), 186–206; Alistair Sponsel, *Darwin's Evolving Identity: Adventure, Ambition, and the Sin of Speculation* (Chicago, 2018).

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Figure 1: Detail of an advertisement for the *Hydrarchos* exhibit in New York. Courtesy of the historical collection at the *Museum für Naturkunde*, Berlin (Bestand: Zool. Mus., Signiatur: SI, Koch, A.u.L, Blatt 2).

the *Hydrarchos* skeleton had been erroneously assembled. In a paper read before the Boston Society of Natural History, Wyman concluded that the fossil actually belonged to an ancient toothed whale and could not be a sea serpent. He also accused Koch of mixing genuine fossil materials with ordinary pieces of rock made to look like the missing parts of a serpentine animal. Finally, he argued that much of the animal's backbone had been cobbled together from the vertebrae of multiple distinct individuals, giving it the impression of being a great deal longer than the creature in fact was. In short, Wyman accused Koch's sensational sea serpent of being more fiction than fact.[12]

As might be expected, Wyman's skepticism about the authenticity of *Hydrarchos* became a sensation among journalists who were eager to

12. "Fossil Bones of the Sea Serpent," *New Hampshire Gazette* (Portsmouth), Sept. 16, 1845, 2; "From Our Correspondent in New York," *Southern Patriot* (Charleston, SC), Oct. 9, 1845, 2. For a printed version of his address, see Jeffries Wyman, "A Communication on the Subject of a Fossil Skeleton Recently Exhibited as That of a Sea Serpent," *Proceedings of the Boston Society of Natural History* 2 (1848), 65–68.

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denounce Koch as an imposter and fraud. The *Salem Register* immediately printed "an amusing letter from a distinguished comparative anatomist" under the headline "Gigantic Humbug Hydrarchos Sillimani," whereas an Ohio paper concluded that Koch's "gigantic serpent" was "no serpent at all—but an ingenious compilation of bones of diverse animals." As a result, Koch would eventually be remembered as one of the most notorious hucksters in the history of paleontology, frequently invoked as an object lesson about the contamination of sober research with boisterous showmanship. Silliman's successor at Yale University, Othniel Charles Marsh, for example, privately described Koch as a "liar." An article appearing in *The American Archaeologist* a few decades later called him "a better financier and speculator than scientist." Frank Thomas Bullen's 1904 book *Denizens of the Deep* similarly described Koch as "a business man first, and a scientist afterwards (a long way)," adding that Koch was "not satisfied with the real scientific value" of his fossil and so "deliberately faked" a sea serpent display. There is no end of other examples, including a 1912 interview with the eminent ichthyologist Theodore N. Gill, who called Koch out as a "pseudoscientist" who had perpetuated "the most successful sea serpent hoax on record" or an internal memorandum from the American Museum of Natural History that judged the *Hydrarchos* as having embodied "little scientific skill or conscience," motivated by the aspiration "to profit by deceiving the startled public."[13]

More significant for our purposes, however, are the reactions

13. "Gigantic Humbug Hydrarchos Sillimani," *Salem Register* (MA), Oct. 23, 1845, 1; "The Hydrarchos Analyzed," *Painesville Telegraph* (OH), Nov. 12, 1845, 3; O. C. Marsh, Diary, 1872, Folder 20, Box 3, Archives of the Peabody Museum of Natural History, Yale University, New Haven, CT; J. F. Snyder, "Addendum to 'How My Archaeological Eye Was Opened,'" *American Archaeologist* 2 (1898), 125; Frank Thomas Bullen, *Denizens of the Deep* (New York, 1904), 173; "The Mystery of the Sea Serpent," *Times-Picayune* (New Orleans), Aug. 11, 1912, 38; "Skeletons and Restorations of Fossil Vertebrates," Folder 5, Box 2, 1: 8, Rachel Nichols Files, Archives of the Department of Vertebrate Paleontology, American Museum of Natural History, New York. For more recent views on Koch, see Paul Semonin, *American Monster: How the Nation's First Prehistoric Creature Became a Symbol of National Identity* (New York, 2000); Brian Switek, *Written in Stone: Evolution, the Fossil Record and Our Place in Nature* (New York, 2010), 161.

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Wyman's pronouncement elicited within the community of learned naturalists during Koch's own lifetime. Rather than denounce him as an imposter and fraud, mid-century naturalists continued to praise Koch as a valued member of their community, albeit one who lacked the skill or standing to offer authoritative pronouncements on controversial matters of scientific debate. This was especially clear when he returned to his home country, Germany. After exhibiting the specimen all across the United States, Koch sailed with his fossil across the Atlantic. Eventually, he exhibited it in Dresden, where the physiologist Carl Gustav Carus lamented the fact that, so far, the specimen had been "more often challenged than closely examined." Carus conceded that Koch had made grave errors in mounting his fossil, but nonetheless insisted that Koch ought to be considered a trustworthy collector whose main fault lay in having "articulated his specimen in haste without the aid of a scientific advisor." Not long thereafter, Koch brought the *Hydrarchos* to Berlin, where the King of Prussia was induced to acquire it for the city's anatomical museum in exchange for a generous stipend of one thousand *Reichsthaler* per year. As a result, the specimen was examined by the noted physiologist Johannes Müller, who went out of his way to thank Koch for unearthing the creature and bringing it to the attention of naturalists. Much as Carus had done, Müller explicitly excused Koch's errors by pointing out that since he "is not himself an anatomist, and had no model of the creature to work from, we cannot expect his exhibit to be accurate in every detail." Both Müller and Carus thus sought to restore the authenticity of Koch's *Hydrarchos* by, first, sharply distinguishing the specimen's material elements (i.e., individual fossilized bones) from the assembled skeleton as a whole and, second, by denying Koch the status of a learned or "philosophical" naturalist who could be expected to offer any more than material objects for examination by more recognized experts.[14]

14. Carl Gustav Carus, *Resultate Geologischer, Anatomischer Und Zoologischer Untersuchungen Über Das Unter Dem Namen Hydrarchos Von Dr. A.C. Koch Zuerst Nach Europa Erbrachte Und in Dresden Ausgestellte Grosse Fossile Skelett* (Dresden, 1847), 5; Johannes Müller, "Untersuchungen über den *Hydrarchos*," in *Bericht der Königl. Preuss. Ak. der Wiss. Berlin*, Apr. 12, 1847, 105; "Der *Hydrarchos* des Herrn Koch," in *Königl. Priv. Berlinische Zeitung von Staats- und gelehrten Sachen* 22 (Jan 27, 1847), 3. All translations from German to English are my own.

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By rescuing Koch's reputation as a trustworthy collector, German naturalists such as Johannes Müller simultaneously vouchsafed the authenticity of his material specimens. This kind of endorsement was in the interests of naturalists on both sides of the Atlantic. There was much that remained unknown about North America's flora and fauna, to say nothing of its prehistoric inhabitants. Hence, naturalists had little choice but to rely upon a small army of what were often called "practical men" such as Koch to supply them with research material. American naturalists adopted the same strategy. Even Jeffries Wyman insisted that he never sought to discredit Koch as a purveyor of "humbug" or "charg[e] him with deception." He only intended to show the *Hydrarchos* to be "a very different beast from what it pretends to be." Wyman was not alone. Writing under the pseudonym "Justice," John Bachman—a respected minister, naturalist, and noted collaborator of John James Audubon—rose to defend Koch against the accusation of fraud, instructing readers to "Free from opprobrium the character of a foreigner whose reputation has been, to all appearances, unjustly assailed." If Bachman acknowledged that Koch had been "richly remunerated" for his work, he also insisted the collector was "richly deserving of the reward as, in order to obtain these relics, he has left his native home and family, and spent a laborious and solitary life in sickly portions of our country." But the very best defense of all came in the form of another open letter, this one penned by the Philadelphia anatomist and geologist Joseph Leidy a decade or so after the initial controversy surrounding the *Hydrarchos*. In the meantime, Koch had uncovered a second, similar fossil whose value and authenticity he was eager to establish. To that end, Koch induced Leidy to go on record and pronounce Koch's newest skeleton a "bona fide collection of bones." For good measure, Leidy added that "Even should a skeleton be made up or restored from the bones of a dozen individuals of the same species, it cannot be considered a deception" so long as its constituent parts furnished "correct knowledge."[15]

15. Jeffries Wyan to Elizabeth Wyman, Nov. 1 and 23, 1845, Folder 4, HMS c 12.1, Countway Library of Medicine, Harvard University; "Basilosaurus," *Charleston Mercury* (SC), Nov. 17, 1847, 2; "Basilosaurus," *Charleston Mercury* (SC), Dec. 14, 1847, 2; Open letter by Joseph Leidy, Apr. 27, 1855, B MS misc., Countway Library of Medicine, Harvard University. Thanks to Paul Brinkman for pointing me in the direction of Bachman's comments. For more on Bachman, including his defense of Koch, see Lester D. Stephens, *Science, Race, and Religion*

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These examples should not suggest that American naturalists were a gullible lot during the first half of the nineteenth century, or that they considered Koch a competent interpreter of the fossils he unearthed. My point is precisely the opposite. Anatomists such as Müller and Leidy deliberately and explicitly denied Koch the standing of a learned naturalist in order to withhold from him the authority required to position his material discoveries in a philosophical framework. By treating Koch as a collector and showman, anatomists such as Müller and Leidy could restrict yet simultaneously also guarantee the kinds of contributions that he was able to make. That is, by refusing to grant him the ability to offer an authoritative account of his specimen's functional anatomy and place in the order of nature, they were able to rescue the rare and valuable objects he brought to light, retaining them for more expert interpretation by other members of the community. As Leidy himself put it so masterfully, although this strategy did not suffice to prove the existence of sea serpents, it did render the *Hydrarchos* a "bona fide collection of bones." By the same token, it withheld from Koch the label of an imposter and fraud, thus vouchsafing his limited but highly valued place in the scientific community.[16]

Whereas Albert Koch operated within a fairly informal knowledge community, the controversy around Samuel Thomson arose in a more formally organized one: the medical marketplace. In part because the stakes were much higher—more people suffered more acutely from bodily maladies than controversies over the existence of sea serpents involved—there were more intense efforts to regulate the antebellum medical marketplace than the natural history community. For that reason, university degrees tended to play a far more important role as a credentialing mechanism, as did various local medical societies and associations, many of which developed licensing schemes during the late eighteenth and

in the American South: John Bachman and the Charleston Circle of Naturalists, 1815–1895 (Chapel Hill, NC, 2000), esp. 52–53.

16. For a more extensive and thorough treatment of Koch and his sea serpent, see Lukas Rieppel, "Albert Koch's Hydrarchos Craze: Credibility, Identity, and Authenticity in Nineteenth-Century Natural History," in *Science Museums in Transition: Cultures of Display in Nineteenth-Century Britain and America*, ed. Carin Berkowitz and Bernard Lightman (Pittsburgh, PA, 2017), 139–61.

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early nineteenth centuries. Despite these efforts, medicine was slow to fully professionalize. The Jacksonian period, especially, saw a proliferation of alternative treatments offered by what their rivals often called "irregular practitioners" or (more derogatively) "quacks." Samuel Thomson was one especially successful and thus controversial "quack" doctor.[17]

Samuel Thomson's particular brand of alternative medicine was not held in high esteem by so-called "regular" physicians, who usually had a university degree and based their treatments on a formal body of accumulated knowledge recorded in books. Regular physicians closely resembled learned naturalists, in that both enjoyed an elite social standing and regarded themselves as engaged in a scholarly pursuit. However, whereas naturalists were dependent upon the collaboration of collectors such as Koch to supply them with specimens, physicians had a far more contentious, competitive, and acrimonious relationship with "irregular" doctors. Indeed, historians often describe the interdynamics between the period's various types of practitioners as a "medical marketplace" in order to emphasize the fierce competition for patients that often obtained among university-trained physicians, apothecaries, and midwives, among a wide range of different healing traditions.[18]

17. For a pioneering social and economic history of alternative medicine, see Roy Porter, *Health for Sale: Quackery in England, 1660–1850* (Manchester, UK, 1989). For the American context, see James C. Whorton, *Nature Cures: The History of Alternative Medicine in America* (Oxford, UK, 2002). See also James Harvey Young, *The Toadstool Millionaires: A Social History of Patent Medicines in America before Federal Regulation* (Princeton, NJ, 1961); Young, *American Health Quackery: Collected Essays by James Harvey Young* (Princeton, NJ, 1992); Young, *The Medical Messiahs: A Social History of Health Quackery in Twentieth-Century America* (Princeton, NJ, 1992).

18. For pioneering works on the "medical marketplace" in early modern Europe, see Harold J. Cook, *The Decline of the Old Medical Regime in Stuart London* (Ithaca, NY, 1986); Katharine Park, *Doctors and Medicine in Early Renaissance Florence* (Princeton, NJ, 1985); Roy Porter, ed., *Patients and Practitioners: Lay Perceptions of Medicine in Pre-Industrial Society* (Cambridge, UK, 1985). For the American context, see Elaine G. Breslaw, *Lotions, Potions, Pills, and Magic: Health Care in Early America* (New York, 2012); Joseph F. Kett, *The Formation of the American Medical Profession: The Role of Institutions, 1780–1860* (New Haven, CT, 1968); Paul Starr, *The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry* (New York, 1982).

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As the very word "quackery" indicates, Thomson's story diverges from Koch's. Whereas Koch's contemporaries steadfastly refused to call him out as a fraud, opponents of "quack" medicine were deeply committed to doing just that. Nevertheless, their motivations for doing so were entirely consonant with the behavior of naturalists such as Müller and Leidy who refused to accuse Koch of deception. In both cases, a group of historical actors sought to exercise control over the composition of the knowledge community to which they belonged. In the first case, the significance of Koch's contributions to natural history—namely, the disarticulated fragments of fossilized bone that he made available for more expert examination—shored up his identity as a valued collector of specimens. In the second, healers who offered to cure the sick with any number of home-grown treatments posed a substantial threat to the livelihood of established, university-trained physicians. Hence, a contest over their place in the community of legitimate healthcare practitioners ensued, one that largely turned on the question of whether purveyors of alternative medicine were guilty of deception and fraud.

Samuel Thomson's "botanical cure," which aimed to harness the medicinal properties of locally available plants, offers an especially compelling case in point. Well-known both among his contemporaries and to modern historians of medicine, Thomson provides a particularly clear illustration of the dynamic this essay seeks to highlight. That is because the accusation of fraud was leveled not only by university-trained physicians toward their Thomsonian rivals. The very same accusation was leveled among practitioners of botanical medicine within the Thomsonian tradition as well.

Samuel Thomson was born into a family of illiterate farmers living near the Vermont border in southwestern New Hampshire in the late 1760s. According to his own autobiographical reflections, he first learned the rudiments of botanical medicine from a widow named Benton who attended to his family's medical needs. She took an interest in the young boy's curiosity about the curative properties of local plants and often allowed Thomson to accompany her on botanical excursions, during which he later claim to have discovered the emetic or purgative properties of the plant *Lobelia inflata*, also referred to as "Indian tobacco" or "puke weed." Over the next several decades, Thomson's interest in herbal medicine only grew, especially after witnessing his mother's death from "galloping consumption" following a lengthy ordeal in which the prescription of mercury and opium by regular physicians

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further weakened her system. "They galloped her out of the world in about nine weeks," Thomson later recalled. According to his own testimony, this early skepticism was reinforced by witnessing the effects of "mineral" medicine (whose *materia medica* relied on the use of metals like mercury rather than plants such as *lobelia*) when administered to his children. As a result, Thomson soon began treating his own family members himself, and it was not long before he was doing the same for his neighbors.[19]

Thomson's services proved to be in such demand that, by 1805, he decided to give up farming altogether and devote himself to the practice of medicine. Initially, he spent most of his time moving from town to town, one of the period's ubiquitous itinerant healers, relying on word of mouth to attract paying customers as he made his rounds through New England. Before long his botanical treatment had become sufficiently popular that he was able to establish several permanent offices in which to see patients, with outposts in Eastport, Maine and Portsmouth, New Hampshire, as well as Boston, Massachusetts. In time Thomson even developed a franchise system of sorts, deputizing trusted associates such as Elias Smith, Abner Kneeland, Samuel Robinson, and Horton Howard to act as his agents, tasking these men to manage the operation of regional offices and local infirmaries. Indeed, Thomson even set up a number of Friendly Botanical Societies whose members were empowered to sell medicines in exchange for a licensing fee and a promise to practice his method of treatment without introducing changes and adulterating what had since become the identifiable "Thomsonian" cure.[20]

Although Thomson sometimes claimed to be illiterate, his success largely derived from a physiological theory modeled on classical antecedents. Much like Galenic humoral theory, Thomson regarded the human body as composed of traditional Aristotelean elements that could be hot or cold, dry or moist. But Thomson broke with tradition in further analogizing the body to a furnace or steam engine. Just as a steam engine had the capacity to produce work, Thomson reasoned, the human body's vitality issued from heat. And as a steam engine's furnace required a

19. Samuel Thomson, *A Narrative of the Life and Medical Discoveries of Samuel Thomson* (Boston, 1822), 24. Here, and below, see also Thomson, *New Guide to Health; or, Botanic Family Physician* (Boston, 1825), esp. 13–26.

20. See John S. Haller, Jr., *The People's Doctors: Samuel Thomson and the American Botanical Movement, 1790–1860* (Carbondale, IL, 2000), esp. 15–42.

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steady supply of wood or coal, the human stomach converted food into life-giving warmth. Disease could therefore be understood as a breakdown of this bodily mechanism. If the body's internal furnace was clogged by excessive consumption of the wrong type of fuel, for example, it would no longer be able to efficiently convert nutrition into vital heat. It thus followed that the regular practice of physicians in bleeding patients to reduce their fevers was precisely the opposite of what should be prescribed. Thomson accordingly advocated measures for unclogging the body's internal mechanism and restoring it to working order. As might be expected, these included the ingestion or injection (by means of an enema) of purgatives such as *Lobelia*, the prescription of heat-inducing foods such as cayenne (*Capsicum annuum*) and other spicy botanicals, and the application of steam to promote sweating and further warm up the body.[21]

In addition to articulating his own theory of disease, Thomson directly attacked university-trained physicians, who were themselves taking aim at practitioners like Thomson in an effort to secure professional dominance. As a general matter, North American doctors were initially frustrated in their attempts to reproduce the professional status and autonomy of their English counterparts. For example, whereas in England the Royal College of Physicians was granted broad powers to regulate the practice of medicine by punishing unlicensed practitioners, the political climate in early nineteenth-century North America presented a substantial obstacle to the erection of a similar, hierarchical guild structure. And although several Anglo American universities began training physicians during the late eighteenth and early nineteenth centuries, they could hardly be said to have monopolized medical education at the time: Besides the existence of countless new medical schools, more informal apprenticeships continued to proliferate. As a consequence, it was relatively easy to enter the medical marketplace and begin plying one's trade.

21. See J. Worth Estes, "Samuel Thomson Rewrites Hippocrates," in *Medicine and Healing*, ed. Jane Montague Benes and Peter Benes, *Dublin Seminar for New England Folklife Annual Proceedings 1990* (Boston, 1992); Whorton, *Nature Cures*, 28–29. See also Samuel Thomson, "Chapter of Life; Or, Concise Physiological Hints of the Laws of Animalization," *Thomsonian Reader* 1, no. 8 (1833), 209–16. For more on the importance of heat in the history of medicine and biology, see Everett Mendelsohn, *Heat and Life: The Development of the Theory of Animal Heat* (Cambridge, MA, 1964).

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As might be expected, university-trained physicians who tended to come from a wealthier background and cater to more elite patients thus sought to tarnish the reputations of competitors.[22]

In response, and in line with a broader turn to what was often called "common sense" philosophy at the time, Thomson accused those who flouted their advanced university degrees of being more interested in reading books than treating patients. Overly beholden to classical sources, he even accused them of outright incompetence. "The way to become a fashionable doctor at the present day is to spend three or four years in what they call reading physic," the preface to the 1825 edition of Thomson's *New Guide to Health* explained, adding that "With these qualifications and a little self-importance they commence their medical career, as ignorant of what is really useful in curing disease, as though they had been shut up in a cloister all that time." In addition, Thomson and his followers also charged physicians with deliberate obfuscation, with erecting barriers designed to prevent ordinary men and women from treating themselves and each other. By ensuring that medical secrets are "kept in a dead language," the *New Guide to Health* argued, "the people are kept ignorant of everything of importance in medicine." Elsewhere, Thomson himself charged that regular doctors "have learned just enough to know how to deceive people, and keep them in ignorance, by covering their doings in a language unknown to their patients."[23]

In stark contrast, Thomson's botanical system was simple, straightforward, and easy to understand. Thomsonian medical theory could be apprehended by anyone with a command of plain English, and the elements of his pharmacopeia could often be found in one's own backyard. Botanical medicine thus presented itself as a radically democratic mode of treatment. Characterized by simplicity and accessibility, it claimed to empower ordinary Americans to take healthcare into their own hands.

22. See Starr, *The Social Transformation of American Medicine*, 30–59.

23. Thomson, *New Guide to Health; or, Botanic Family Physician*, 6–7; Thomson, *A Narrative of the Life and Medical Discoveries of Samuel Thomson*, 2nd ed. (Boston, 1825), 41–42. For more on American "common sense" philosophy that focuses on the history of science and medicine in particular, see "Electricity as Common Sense," in James Delbourgo, *A Most Amazing Scene of Wonders: Electricity and Enlightenment in Early America* (Cambridge, MA, 2006), 239–77. For a broader, political history, see Sophia Rosenfeld, *Common Sense: A Political History* (Cambridge, MA, 2011).

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This was not only its principle strength among a broad and diverse public. Ironically, it would also contribute to Thomson's undoing.

Thomson and his followers went even further in defending their common-sense cure, charging regular physicians with offering treatments that often did more harm than good. They were particularly keen to denounce the rigorous kind of "heroic medicine" championed by physicians like Benjamin Rush at the turn of the century. These doctors were charged with being so obsessed with restoring humoral balance that they prescribed treatments that only further weakened an already ailing body, which could include multiple sessions of bloodletting as well as the application of "mineral" (instead of botanical) therapeutics that caused the body to blister and expel saliva, bile, urine, and excrement. For example, the frontispiece to Benjamin Thompson's *The Steam Doctor's Defense*, published in 1838, depicted vignettes of two distinct infirmaries, contrasting the "Fashionable System" and the Thomsonian cure. While "Mercury" and "Opium" were administered in the first, together with "Bleeding" and "Saline Injections," all leading to "Death," Thomson's "Vegetable Medicine" could be trusted to yield long-lasting "Life and Health." A widely reprinted illustration appearing in the premiere issue of the *Thomsonian Watchman* in 1834 made a similar comparison between an MD and fellow of the Royal Society bludgeoning a patient resembling a corpse with a club representing calomel (mercury chloride) while the latter bled and exclaimed that "The Doctor knows best, but send for the Parson," and a Thomsonian doctor informed by "Reason" prescribing such "food" as "Lobelia" and "Capsicum" in assisting his patient ascend the "Steps of Common Sense" and regain "a prospect of health." In these and countless other examples, Thomson and his followers publicly accused the medical establishment of subscribing to a body of knowledge that was not only hermetic, pedantic, and out-of-touch, but downright dangerous if not lethal.[24]

24. Benjamin Thompson, *The Steam Doctor's Defence: Exhibiting the Superiority of the Thomsonian System of Medicine in Relieving and Curing Disease* (Boston, 1833); *The Thomsonian Botanic Watchman* 1, no. 1 (1834), 8. For an overview of early American therapeutics, see Charles E. Rosenberg, "The Therapeutic Revolution: Medicine, Meaning, and Social Change in Nineteenth-Century America," in *The Therapeutic Revolution: Essays in the Social History of American Medicine: Essays in the Social History of American Medicine*, ed. Morris J. Vogel and Charles E. Rosenberg (Philadelphia, 1979), 3–25. See also John Harley Warner, *The Therapeutic Perspective: Medical Practice, Knowledge, and Identity*

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THE CONTRAST; OR AN ILLUSTRATION OF THE DIFFERENCE BETWEEN THE REGULAR AND THOMSONIAN SYSTEMS OF PRACTICE IN RESTORING THE SICK TO HEALTH.
Calomel
You must be reduced, Sir!
Scientific with a vengeance. But look here Dr!
I have once more a prospect of health.
With the blessing of God I will help you out.
The Doctor knows best, but send for the Parson.
INCONSISTENCY
STEPS OF COMMON SENSE
SLOUGH OF DISEASE

Figure 2: Illustration from *The Thomsonian Botanic Watchman*, vol. 1, no. 1 (1834), p. 8.

Regular physicians were quick to respond in kind, inciting a protracted dispute. The controversy became especially acute as Thomsonian medicine grew increasingly successful during the 1820s and 30s, attracting more patients not only from New England but other parts of the country as well. This development fed a more general anxiety among university-trained physicians regarding their ability to attract paying customers in a crowded and intensely competitive market. The position of university-trained doctors was already tenuous in American society, and growing ever more so during the Jacksonian years as widespread fears of illegitimate monopoly power—secured through government privilege, including the licensing schemes by which physician's organizations established limits on who could practice medicine—became stronger. For

in America, 1820–1885 (Cambridge, MA, 1986). For more on Benjamin Rush in particular, see Carl Binger, *Revolutionary Doctor: Benjamin Rush, 1746–1813* (New York, 1966).

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example, whereas Illinois first empowered medical societies to issue licenses in 1817, that privilege was revoked again in 1826, while Ohio repealed its 1811 licensing law in 1833. According to the historian Paul Starr, although the "issue was defined by the regular physicians as science versus quackery," irregulars such as the Thomsonians successfully re-framed it as one of "free competition versus monopoly." In response, accusations of deceptive and fraudulent, not to mention dangerous, practices were deployed in attempting to exert control over access to the medical marketplace and, with it, the right to treat patients. Whereas Thomsonians accused regular physicians of resorting to dead languages, university degrees, and ill-gotten government privileges, their opponents derided botanical practitioners as quacks and mountebanks peddling snake oil and various other humbugs. To quote the New York MD David Meredith Reese, "any simpleton" willing to pay "twenty dollars for a patent-right, may be fully armed and equipped for 'the work of death;' and besides all the '*larning*' imparted to him, he will be supplied with lobelia, bayberry, and other '*yarbs*;' and the entire library of Thomsonianism, consisting of *one book!* Will be thrown into the bargain." The practice of botanical medicine, he concluded, "requires no kind of knowledge either of the human body, its diseases, or its remedies, nor indeed any other qualification than to be a fool."[25]

The dispute between regular physicians and Thomsonians exhibited a striking symmetry. Both sides accused the other of malpractice and fraud. Thomsonians claimed that "heroic" medicine quickened a patient's demise, while their rivals charged botanical healers with manslaughter. Reese went so far as to proclaim that

> [t]he number of lives which have been sacrificed by the steaming process, and the violence of the external and internal treatment to which this sect of quacks resorts, has again and again been brought before the civil and the criminal tribunals. The systematic arrangements for clandestinely murdering its victims, may be seen in the fact, that as numerous courses of the steaming and medicine are called for, infirmaries are established, in which patients are received both for boarding and physic, where they are successively taken care of on the Thomsonian plan, until they either

25. Starr, *The Social Transformation of American Medicine*, 58; David Meredith Reese, *Humbugs of New-York* (New-York, 1838), 118. See also Haller, *The People's Doctors*, 131–38.

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run away before they have become its victims, or they are quietly buried from the infirmaries; without, in the general, having the benefit of the clergy, or of the coroner's inquest; to which last, they are justly entitled, seeing that they come to their death by violence."[26]

Samuel Thomson was even formally charged with murder in 1809 by a regular physician from Salisburty, New Hampshire. Although Thomson, whose defense was handled by the famed lawyer Joseph Story, was eventually acquitted on all counts, he did not escape being "put in irons" and spending several weeks in a Newburyport "dungeon." Other, less renowned botanical healers did not fare nearly so well. In 1837, for example, a Thomsonian doctor named John Morgridge of New Bedford was found guilty of having poisoned his patient Eliza L. Howland. And Richard K. Frost was convicted of manslaughter in 1838. Thus, while irregular doctors successfully fought to repeal medical licensing statutes on a state-by-state basis, regulars worked no less assiduously to institute what were often called "Black Laws" that prevented competitors from plying their trade.[27]

While its practitioners often claimed to represent a radically democratic approach to health and healing, the Thomsonian movement quickly became consumed by a series of internecine struggles. In some ways, Thomson was a victim of his own success. But he also proved himself to be overprotective of what he considered to be his intellectual property. To help maintain exclusive control over his pharmacopeia, for example, Thomson secured a federal patent from the United States government in March of 1813. Soon thereafter, he took the additional step of disbanding all of the numerous Botanic Societies that had sprung up over the preceding decade, replacing them with a single United States Friendly Botanic Society over which he exerted direct personal control. At the same time, however, Thomson remained dependent upon a growing cadre of agents and sub-agents for spreading the gospel outside of

26. Reese, *Humbugs of New-York*, 119.

27. Thomson, *A Narrative of the Life and Medical Discoveries of Samuel Thomson*, 1822, 91. See also Haller, *The People's Doctors*, 130; Bruce A. Kimball, *The "True Professional Ideal" in America: A History* (Cambridge, MA, 1992); James C. Mohr, *Licensed to Practice: The Supreme Court Defines the American Medical Profession* (Baltimore, 2013); Henry Burnell Shafer, *The American Medical Profession, 1783 to 1850* (New York, 1936).

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New England. This often led to intense friction and disputes over control, including an argument with his general agent in Ohio, Horton Howard, over monies owed from the sale of copyrighted literature and "Family Rights," or formal permission to practice Thomsonian medicine. In addition to jealously guarding the source of financial gain, Thomson also claimed to be increasingly anxious about his system being adulterated by unscrupulous practitioners who mixed "genuine" botanical medicine with other methods. He frequently turned to the courts to defend his intellectual property and to protect the integrity of his trade. In one instance, he successfully recovered $12,500 in damages for the sale of a counterfeit edition of his most widely read book, the *New Guide to Health*. In another case, he was awarded $25,000 to be recompensed by a party found guilty of practicing Thomsonian medicine without paying a licensing fee. More often than not, however, such legal challenges were unsuccessful, and Thomson was forced to devise alternative strategies for intimidating would-be competitors. These included hiring paid accomplices who agreed to infringe on his intellectual property and then fail to contest the charges in court, all in hopes of dissuading others from doing the same.[28]

Although Thomson hailed his system of healing as a radically democratic movement, he himself became increasingly authoritarian over time. As his botanical medical practice grew, Thomson found it increasingly difficult to put its egalitarian rhetoric into practice, and his efforts to maintain control over his legion of followers only grew more and more dogged. What made these developments particularly ironic was that much of the dispute revolved around a call from some of Thomson's own followers to adopt practices more characteristic of regular medicine. A particularly revealing dispute erupted in the mid-1830s between Thomson and a botanical healer in Ohio named Alva Curtis. As editor of the *Thomsonian Recorder*, Curtis had begun urging readers to familiarize themselves with the rudimentary basics of human anatomy, arguing that the scientific illiteracy of most irregular doctors not only hampered its further development but also gave ammunition to critics who sought to undermine the Thomsonian movement. During the late 1830s, Curtis

28. See Haller, *The People's Doctors*, 121–23.

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even took the extraordinary step of chartering a "Botanico-Medical College" in Columbus, Ohio, where he taught Thomsonian medicine supplemented by a basic course of anatomy, physiology, chemistry, and botany, as well as some surgery and obstetrics. As might be expected, this provoked considerable ire among orthodox Thomsonians, and the great man himself rose up to proclaim that he would do all he could to prevent his system from being turned into a learned discipline or profession. But Curtis refused to give up, insisting that the only way one could reliably "separate the gold of [Thomson's] system from the dross that other 'Botanic' quackeries have heaped upon and around it, is to establish schools and infirmaries everywhere, and have them taught and conducted by men who know the difference between truth and falsehood, wisdom and folly, science and quackery." For their part, the steam doctor and his closest allies were not about to give in, resolutely insisting that medicine must be practiced by "empirics" who learned their craft at the patient's bedside rather than in a book or the lecture hall.[29]

As a result of these controversies, accusations of fraud began to abound within the Thomsonian circle and not just between alternative healers and regular physicians. Even Thomson's medical bible, the *New Guide to Health*, alerted readers that "there are quacks under this system as well as others." In addition to denigrating rivals like Curtis, such stern warnings also allowed Thomson to vouchsafe the legitimacy of his book as a printed document whose contents explicitly extolled the virtues of tacit knowledge and bedside experience over formal instruction and learning. Indeed, the *New Guide to Health* was primarily marketed as an instructional guide on how to distinguish true Thomsonian medicine from charlatans and pretenders, not as a textbook to teach patients how they might practice botanical medicine on their own. As a prefatory section entitled "Advertisement to the Public" explicitly argued, "those who possess this work, may by examining it be able to detect any improper deviations therefrom; and they are assured that any practice which is not conformable to the directions given, and does not agree with the principles herein laid down, is unauthorized by me." In other words, Thomson's *Guide* explicitly advertised that it could turn readers into

29. Alva Curtis, "Cincinnati Convention," *Thomsonian Recorder* 4, no. 9 (1836), 138.

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more sophisticated consumers. In this way, Thomson could effectively have it both ways. He not only struck a blow to the competition but he also could make money from the sale of instructional guides without detracting too much from the profits of his infirmaries.[30]

Because knowledge is usually understood to provide a reliable account of true states of affairs, its usefulness is often seen to issue from the power it confers to intervene in and shape the material world. This essay has adopted a different approach to the problem of knowledge, together with an alternative account of its usefulness. Rather than treat a claim's status as genuine knowledge to be a matter of fact, I have instead sought to emphasize its sociological dimensions. To be sure, there is a fact of the matter regarding the existence of sea serpents or the efficacy of Thomsonian medicine. But in neither case did this actually suffice to settle the question. Hence, for historians of knowledge to equate our object of study with the truth is to put the cart before the horse, insofar as doing so presupposes the outcome of the very debates whose substance ought to engage our attention and serve as the basis for our empirical investigations. In contrast, this essay attempted to treat the problem of knowledge as exactly that, a genuine and thorny methodological problem worthy of investigation on its own terms.[31]

To treat the problem of knowledge as a genuine problem is to eschew an *a priori* method of demarcating truth from falsehood, deception, and fraud. This does not amount to a claim that such demarcations are impossible, that facts do not exist. But it does mean that historians ought to treat the way these demarcations were drawn as matters of *historical* fact. As this essay has tried to show, it also involves accepting an alternative account of the uses to which knowledge can be put. In addition to providing the knower with powers to shape the material world, the authority to demarcate truth from falsehood also imparts immense *social*

30. Thomson, *New Guide to Health; or, Botanic Family Physician*, 12; ibid., 4. See also Haller, *The People's Doctors*, 84–111.

31. In contrast, philosophers usually define knowledge in normative terms, as beliefs that are *reliable* or *justified* somehow. See, for example, Alvin I. Goldman and Matthew McGrath, *Epistemology: A Contemporary Introduction* (New York, 2014).

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power. To know something is not just to have access to the truth, but to have the community sanction such access as genuine and worthy of recognition. For that reason, distinctions between truth and falsehood are a constitutive act of knowledge communities as such. To deny someone's knowledge claim on the grounds of untruthfulness is to call for their expulsion from the relevant knowledge community, whereas to affirm someone's access to truth is to shore up their status as a valued member of that community. Hence, the ability to demarcate truth from untruth can act as a strategic resource for those jostling for position within knowledge communities. The uses to which knowledge was put was thus profoundly social as well as material, shaping the contours of the communities to which knowing subjects belonged.

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